National Institute of Environmental Health Sciences

Climate change threats to population health and well-being: The imperative of protective solutions that will last

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Abstract:

BACKGROUND: The observational evidence of the impacts of climate conditions on human health is accumulating. A variety of direct, indirect, and systemically mediated health effects have been identified. Excessive daily heat exposures create direct effects, such as heat stroke (and possibly death), reduce work productivity, and interfere with daily household activities. Extreme weather events, including storms, floods, and droughts, create direct injury risks and follow-on outbreaks of infectious diseases, lack of nutrition, and mental stress. Climate change will increase these direct health effects. Indirect effects include malnutrition and under-nutrition due to failing local agriculture, spread of vector-borne diseases and other infectious diseases, and mental health and other problems caused by forced migration from affected homes and workplaces. Examples of systemically mediated impacts on population health include famine, conflicts, and the consequences of large-scale adverse economic effects due to reduced human and environmental productivity. This article highlights links between climate change and non-communicable health problems, a major concern for global health beyond 2015. DISCUSSION: Detailed regional analysis of climate conditions clearly shows increasing temperatures in many parts of the world. Climate modelling indicates that by the year 2100 the global average temperature may have increased by 34 degrees C unless fundamental reductions in current global trends for greenhouse gas emissions are achieved. Given other unforeseeable environmental, social, demographic, and geopolitical changes that may occur in a plus-4-degree world, that scenario may comprise a largely uninhabitable world for millions of people and great social and military tensions. CONCLUSION: It is imperative that we identify actions and strategies that are effective in reducing these increasingly likely threats to health and well-being. The fundamental preventive strategy is, of course, climate change mitigation by significantly reducing global greenhouse gas emissions, especially long-acting carbon dioxide (CO(2)), and by increasing the uptake of CO(2) at the earth's surface. This involves urgent shifts in energy production from fossil fuels to renewable energy sources, energy conservation in building design and urban planning, and reduced waste of energy for transport, building heating/cooling, and agriculture. It would also involve shifts in agricultural production and food systems to reduce energy and water use particularly in meat production. There is also potential for prevention via mitigation, adaptation, or resilience building actions, but for the large populations in tropical countries, mitigation of climate change is required to achieve health protection solutions that will last.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3617647

Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: ☑

audience to whom the resource is directed

Public

Exposure : ☑

weather or climate related pathway by which climate change affects health

Unspecified Exposure

Geographic Feature: ☑

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Global or Unspecified

Health Co-Benefit/Co–Harm (Adaption/Mitigation): ☑

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact: ☑

specification of health effect or disease related to climate change exposure

General Health Impact

Medical Community Engagement: ☑

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation, Mitigation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Methodology

☑

Resource Type:

format or standard characteristic of resource

Review

Resilience:

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale:

time period studied

Time Scale Unspecified